Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-34. (Canceled)

35. (New) A device for bone regeneration by means of callus distraction for use in a process according to claim 1 or 2 having a membrane (4, 4', 24, 35) that is permeable for the exchange of nutrients at least for serum and structurally stable, incorporating the surface (15) that is to be bonded to a vital bone to be regenerated (2, 22, 38, 39) and having means (9, 5, 6, 25, 36) whereby the membrane (4, 4', 24, 35) is moveable for the regeneration with a certain pulling force and a speed of 0,5 to 2 mm/day, characterised in that said membrane (4, 4', 24, 35) on a side thereof facing the bone incorporates means (16) for the biological anchoring and adhesion for bone cells and that the means (16) for the biological anchoring of bone cells incorporates osteoblasts (18).

36. (New) A device according to claim 35, characterised in that the means (16) for the biological

anchoring of bone cells incorporates protein molecules and/or interconnecting pores.

37. (New) A device according to claim 36, characterised in that the protein molecules are short-chain molecules.

38. (New) A device according to claim 35, characterised in that the means for the biological anchoring of bone cells substantially extends over the total surface (15) to be anchored of the membrane (4, 4', 24, 35).

39. (New) A device according to claim 35, characterised in that osteoblasts (18), which are anchored to said means (16) for biological adhesion, are colonised on said surface (15) of the membrane (4, 4', 24, 35).

40. (New) A device according to claim 35, characterised in that the osteoblasts (18) are anchored to short-chained protein molecules by means of adhesion.

41. (New) A device according to claim 35, characterised in that the means (9, 5, 6, 25, 36) for moving the membrane (4, 4', 24, 35) are mechanical pulling or pushing means.

42. (New) A device according to claim 35, characterised in that the means (9) for moving the membrane

(4, 4', 24, 35) incorporate at least one magnet (9) whereby a force is exerted upon the membrane (4, 4').

43. (New) A device according to claim 35, characterised in that the membrane (4, 4') incorporates a carrier (13) that is provided with a plurality of passages (14).

44. (New) A device according to claim 43, characterised in that the carrier (13) is made of metal, preferably titanium.

45. (New) A device according to claim 43, characterised in that the carrier (13) is an open pore metal plate, or a grid or net.

46. (New) A device according to claims 43, characterised in that said means (16) for the biological adhesion of osteoblasts (17, 18) are disposed on the carrier (13).

47. (New) A device according to claim 35, characterised in that said means (16) for the biological adhesion of osteoblasts (17, 18) are organic molecules.

48. (New) A device according to claim 47, characterised in that the organic molecules are protein molecules.

49. (New) A device according to claim 48, characterised in that the protein molecules are short chained.

50. (New) A device according to claim 35, characterised in that the surface to be bonded is provided for the biological bonding of the bone tissue with hydroxyl groups and/or amine groups.

51. (New) A membrane according to claim 35, characterised in that the surface to be bonded incorporates microstructural, mesostructural and macrostructural indentations with the following dimension ranges: microstructural: < 5 µm, mesostructural: 5 - 25 µm, macrostructual: 10 - 1000 µm.

52. (New) A device according to claim 35, characterised in that the surface to be bonded is structured by sand blasting.

53. (New) A process for bone regeneration through callus distraction that uses the device of claim 35, wherein the membrane (4,4') is permeable for the exchange of nutrients, comprising the steps of:

incorporating the means (16) for the biological adhesion of osteoblasts (17,18) to the surface (15) of the membrane (16),

providing osteoblasts (18) on the surface (15) to be placed against the vital bone (2),

facing the surface (15) of the membrane (16) toward the vital bone (2),

placing the membrane (16) onto the vital bone (2) location being regenerated, and

moving the membrane (4,4') away from the vital bone (2) for distraction at a speed of .5 to 2mm per day.

54. (New) The process according to claim 53, further comprising the step of initiating and attaining cell proliferation and differentiation through biomechanical transmission of stimuli onto the cytoskeleton and growth or regeneration of tissue.